

CLAIMS:

We claim:

- 1 1. In a digital communications network, a method comprising:
2 monitoring a plurality of links to determine state changes of the links;
3 enforcing an IMA-ID check when an insufficient links state is reached;
4 relaxing the IMA-ID check when all the links are in an error state; and
5 re-enforcing an IMA-ID check when at least one link of the plurality of links
6 recovers from an error state .
- 1 2. The method of claim 1, further comprising enforcing the IMA-ID check if a
2 near end IMA-ID does not match a far end IMA-ID.
- 1 3. In a digital communications network, a method comprising:
2 restarting an existing IMA group, comprising
3 learning an IMA group ID of a far end IMA group;
4 making the IMA group ID persistent;
5 using only links matching the IMA group ID; and
6 placing non-matching links in an unusable state.
- 1 4. The method of claim 3, wherein learning an IMA group ID further
2 comprises:
3 resynchronizing the IMA group; and

4 extracting the IMA group ID from a first connected link.

1 5. The method of claim 3, wherein making the IMA group ID persistent
2 further comprises storing a new IMA group ID in memory.

1 6. The method of claim 3, wherein using only matching links further
2 comprises screening IMA links having an IMA group ID that are involved in
3 unintentional IMA group restarts for a matching stored IMA group ID.

4 7. The method of claim 3, further comprising looping back all links.

1 8. The method of claim 3, further comprising marking all links as unusable.

1 9. In a digital communications network, a system comprising:
2 means for monitoring a plurality of links to determine state changes of the
3 links;
4 means for enforcing an IMA-ID check when an insufficient links state is
5 reached;
6 means for relaxing the IMA-ID check when all the links are in an error
7 state; and
8 means for re-enforcing an IMA-ID check when at least one link of the
9 plurality of links recovers from an error state .

1 10. The system of claim 9, further comprising means for enforcing the IMA-ID
2 check if a near end IMA-ID does not match a far end IMA-ID.

1 11. In a digital communications network, a system comprising:
2 means for restarting an existing IMA group, comprising
3 means for learning an IMA group ID of a far end IMA group;
4 means for making the IMA group ID persistent;
5 means for using only links matching the IMA group ID; and
6 means for placing non-matching links in an unusable state.

1 12. The system of claim 11, wherein learning an IMA group ID further
2 comprises:
3 means for resynchronizing the IMA group; and
4 means for extracting the IMA group ID from a first connected link.

1 13. The system of claim 11, wherein making the IMA group ID persistent
2 further comprises storing a new IMA group ID in memory.

1 14. The system of claim 11, wherein using only matching links further
2 comprises screening IMA links having an IMA group ID that are involved in
3 unintentional IMA group restarts for a matching stored IMA group ID.

1 15. The system of claim 11, further comprising looping back all links.

1 16. The system of claim 11, further comprising marking all links as unusable.

1 17. A computer-readable medium having stored thereon a plurality of
2 instructions, said plurality of instructions when executed by a computer, cause
3 said computer to perform the method comprising:

4 monitoring a plurality of links to determine state changes of the links;
5 enforcing an IMA-ID check when an insufficient links state is reached;
6 relaxing the IMA-ID check when all the links are in an error state; and
7 re-enforcing an IMA-ID check when at least one link of the plurality of links
8 recovers from an error state .

1 18. The computer-readable medium of claim 17 having stored thereon
2 additional instructions, said additional instructions when executed by a computer,
3 cause said computer to further perform enforcing the IMA-ID check if a near end
4 IMA-ID does not match a far end IMA-ID.

1 19. In a digital communications network, a method comprising:
2 restarting an existing IMA group, comprising
3 learning an IMA group ID of a far end IMA group;
4 making the IMA group ID persistent;
5 using only links matching the IMA group ID; and
6 placing non-matching links in an unusable state.

1 20. The computer-readable medium of claim 19 having stored thereon
2 additional instructions, said additional instructions when executed by a computer
3 for learning an IMA group ID, cause said computer to further perform:
4 resynchronizing the IMA group; and
5 extracting the IMA group ID from a first connected link.

1 21. The computer-readable medium of claim 19 having stored thereon
2 additional instructions, said additional instructions when executed by a computer
3 for making the IMA group ID persistent, cause said computer to further perform
4 storing a new IMA group ID in memory.

1 22. The computer-readable medium of claim 19 having stored thereon
2 additional instructions, said additional instructions when executed by a computer
3 for using only matching links, cause said computer to further perform screening
4 IMA links having an IMA group ID that are involved in unintentional IMA group
5 restarts for a matching stored IMA group ID.

1 23. The computer-readable medium of claim 19 having stored thereon
2 additional instructions, said additional instructions when executed by a computer,
3 cause said computer to further perform looping back all links.

1 24. The computer-readable medium of claim 19 having stored thereon
2 additional instructions, said additional instructions when executed by a computer,
3 cause said computer to further perform marking all links as unusable.

1
2 25. A line card for use in a switch, comprising:
3 a central processing unit (CPU);
4 a system controller connected to the central processing unit;
5 random access memory (RAM) connected to the system controller; and
6 a group restarter connected to the CPU, controller, and RAM wherein the
7 group restarter restarts an IMA group.

1 26. The switch of claim 25 wherein the processor monitors a plurality of links
2 to determine state changes of the links and enforces an IMA-ID check when an
3 insufficient links state is reached.

1 27. The switch of claim 26 wherein the processor relaxes the IMA-ID check
2 when all the links are in an error state and re-enforces an IMA-ID check
3 when at least one link of the plurality of links recovers from an error state.

1 28. The switch of claim 27, wherein the processor enforces the IMA-ID check
2 if a near end IMA-ID does not match a far end IMA-ID.
1